assembly, a second device for cutting the belt assembly into belt strips, a third device for cutting the belt strips into portions of predetermined length, and at least one assembly drum.--

IN THE CLAIMS:

Please cancel, without prejudice or disclaimer, claims 2-22, and add new claims 23-44, as follows:

--23. (new) A method for manufacturing a belt structure of a vehicle tire, comprising the steps of:

preparing, in a substantially-continuous manner, a belt assembly incorporating reinforcing cords substantially parallel to one another and inclined at a first predetermined angle with respect to a longitudinal axis of the belt assembly;

cutting, in a substantially-continuous manner, the belt assembly along a first cutting direction substantially parallel to the longitudinal axis to obtain first and second substantially-continuous belt strips extending along two conveying directions substantially parallel to one another;

supplying, in a substantially-continuous manner, the first and second belt strips to at least one assembly drum; and

superposing on the at least one assembly drum portions of the first and second belt strips, each having predetermined length, to obtain a belt structure comprising radially-superposed portions of the first and second belt strips, wherein in each portion of the first belt strip the reinforcing cords are substantially parallel to one another, wherein in each portion of the second belt strip the reinforcing cords are substantially parallel to one another, and wherein in the

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radially-superposed portions of the first and second belt strips the reinforcing cords in the first belt strip are inclined in an opposite direction with respect to the reinforcing cords in the second belt strip.

24. (new) The method of claim 23, wherein the step of preparing the belt assembly comprises the steps of:

forming, in a substantially-continuous manner, a sheet of rubber-coated fabric incorporating a plurality of reinforcing cords substantially parallel to one another;

transporting the sheet along a predetermined conveying direction;

cutting the sheet along a second cutting direction forming a second predetermined angle with respect to a conveying direction of the sheet to obtain a plurality of strips of predetermined prevailing length;

rotating each strip by an angle equal to the first predetermined angle; and

splicing the rotated strips at an edge of the predetermined prevailing length thereof.

25. (new) The method of claim 23, wherein the step of superposing on the at least one assembly drum portions of the first and second belt strips comprises the steps of:

a) cutting the first belt strip to form a portion having a length substantially equal to a circumferential development of a first assembly drum;

b) applying the portion of the first belt strip on the first assembly drum, wherein the first assembly drum and a second assembly drum are coaxially aligned along a substantially-horizontal rotation axis, and wherein the first and second assembly drums are fixed on

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diametrically opposite sides of a device for supporting and angularly positioning the first and second assembly drums;

c) rotating the device 180° about an axis perpendicular to the substantially-horizontal rotation axis, thereby switching positions of the first and second assembly drums;

d) cutting the second belt strip to form a portion having a length substantially equal to the length of the portion of the first belt strip;

e) applying the portion of the second belt strip on the portion of the first belt strip to obtain the belt structure;

f) switching designations of the first assembly drum and the second assembly drum;

g) repeating steps a) through f) to obtain additional belt structures.

26. (new) The method of claim 23, further comprising the step of discarding one of the portions of the first and second belt strips.

27. (new) The method of claim 23, wherein the portions of the first and second belt strips are obtained on respective means for conveying the first and second belt strips and the portions of the first and second belt strips along the two conveying directions.

28. (new) The method of claim 27, wherein the belt strips are supplied to the at least one assembly drum by the means for conveying the first and second belt strips and the portions of the first and second belt strips.

29. (new) An apparatus for manufacturing a belt structure of a vehicle tire, comprising:

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an extrusion apparatus for forming, in a substantially-continuous manner, a sheet of rubber-coated fabric incorporating a plurality of reinforcing cords substantially parallel to one another;

means for conveying the sheet along a first conveying direction;

a first cutting device for cutting the sheet in a cutting position along a cutting direction forming a first predetermined angle with respect to the first conveying direction to obtain a plurality of strips of predetermined length;

a device for transferring the strips from the cutting position to a releasing position where the strips are arranged parallel to one another along edges of prevailing length thereof;

a device for splicing the strips at the edges of prevailing length thereof to form a substantially-continuous belt assembly incorporating reinforcing cords parallel to one another and inclined at a second predetermined angle with respect to a longitudinal axis of the belt assembly;

means for conveying the strips and the belt assembly along a second conveying direction;

a second cutting device for cutting the belt assembly along the longitudinal axis into two belt strips;

a third cutting device for cutting each of the belt strips into portions of predetermined length;

means for conveying the belt strips and the portions of the belt strips along respective conveying directions; and

at least one assembly drum adapted to support the portions of the belt strips.

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30. (new) The apparatus of claim 29, further comprising a device for picking up and intermittently discarding portions of the belt strips.

31. (new) The apparatus of claim 29, wherein the extrusion apparatus comprises an extrusion head for supplying, in a substantially-continuous manner, the sheet on the means for conveying the sheet, wherein the plurality of reinforcing cords are supplied by a creel supported upstream of the extrusion head.

32. (new) The apparatus of claim 29, wherein the device for transferring the strips comprises:

means for moving the strips away from the cutting position and placing the strips in a pickup position away from the first conveying direction; and

at least one positioning device for picking up the strips from a pickup position and placing the strips in a releasing position onto the means for conveying the strips and the belt assembly.

33. (new) The apparatus of claim 32, wherein the means for moving the strips away comprises a means for conveying the strips having a conveying axis substantially parallel to the cutting direction, wherein the means for conveying the strips is movable between a receiving position of the strips arranged downstream of the first cutting device and the pickup position.

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34. (new) The apparatus of claim 32 or 33, further comprising a device for catching the sheet active to transport a free end of the sheet past the first cutting device, wherein the device for catching the sheet cooperates with the device for transferring the strips.

35. (new) The apparatus of claim 33, wherein the at least one positioning device comprises a device for catching the strips, wherein the device for catching the strips is rotatably mounted about an axis perpendicular to the strips on a supporting frame movably driven to and from the means for conveying the strips.

36. (new) A method for manufacturing a belt package of a vehicle tire, comprising the steps of:

a) preparing a belt structure on a first assembly drum by:

preparing, in a substantially-continuous manner, a belt assembly incorporating reinforcing cords substantially parallel to one another and inclined at a first predetermined angle with respect to a longitudinal axis of the belt assembly;

cutting, in a substantially-continuous manner, the belt assembly along a first cutting direction substantially parallel to the longitudinal axis to obtain first and second substantially-continuous belt strips extending along two conveying directions substantially parallel to one another;

supplying, in a substantially-continuous manner, the first and second belt strips to a first assembly drum; and

superposing on the first assembly drum portions of the first and second belt strips, each having predetermined length, to obtain a belt structure comprising radially-superposed portions

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of the first and second belt strips, wherein in each portion of the first belt strip the reinforcing cords are substantially parallel to one another, wherein in each portion of the second belt strip the reinforcing cords are substantially parallel to one another, and wherein in the radially-superposed portions of the first and second belt strips the reinforcing cords in the first belt strip are inclined in an opposite direction with respect to the reinforcing cords in the second belt strip;

b) transferring the belt structure onto a second assembly drum; and

c) coaxially forming on the belt structure a layer of circumferentially-oriented reinforcing cords, the layer having a maximum length and a maximum width substantially equal to those of the belt structure.

37. (new) The method of claim 36, wherein the layer of reinforcing cords is formed by applying on the belt structure a ribbon of rubber mixture having a predetermined width, wherein the ribbon is coextruded in a substantially-continuous manner together with a plurality of cords prealigned along a direction parallel to an extrusion direction of the ribbon.

38. (new) The method of claim 36, wherein the layer is formed by spirally winding on the belt structure at least one tape of rubber-coated fabric incorporating one or more reinforcing cords.

39. (new) An apparatus for manufacturing a belt package of a vehicle tire, comprising:

an extrusion apparatus for forming, in a substantially-continuous manner, a sheet of rubber-coated fabric incorporating a plurality of reinforcing cords substantially parallel to one another;

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means for conveying the sheet along a first conveying direction;

a first cutting device for cutting the sheet in a cutting position along a cutting direction forming a first predetermined angle with respect to the first conveying direction to obtain a plurality of strips of predetermined length;

a device for transferring the strips from the cutting position to a releasing position where the strips are arranged parallel to one another along edges of prevailing length thereof;

a device for splicing the strips at the edges of prevailing length thereof to form a substantially-continuous belt assembly incorporating reinforcing cords parallel to one another and inclined at a second predetermined angle with respect to a longitudinal axis of the belt assembly;

means for conveying the strips and the belt assembly along a second conveying direction;

a second cutting device for cutting the belt assembly along the longitudinal axis into two belt strips;

a third cutting device for cutting each of the belt strips into portions of predetermined length;

means for conveying the belt strips and the portions of the belt strips along respective conveying directions;

at least one assembly drum adapted to support the portions of the belt strips;

an extrusion apparatus for forming, in a substantially-continuous manner, a ribbon or tape of rubber mixture incorporating a plurality of reinforcing cords substantially parallel to one another;

means for cutting the ribbon or tape of rubber mixture into portions of predetermined length;

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a belt package assembly drum; and

a transfer device for transferring the belt structure towards the belt package assembly drum.

40. (new) The apparatus of claim 39, wherein the extrusion apparatus for forming, in a substantially-continuous manner, the ribbon or tape of rubber mixture comprises an extrusion head.

41. (new) A method for manufacturing a crown structure of a vehicle tire, comprising the steps of:

a) preparing a belt package on a second assembly drum by:

preparing, in a substantially-continuous manner, a belt assembly incorporating reinforcing cords substantially parallel to one another and inclined at a first predetermined angle with respect to a longitudinal axis of the belt assembly;

cutting, in a substantially-continuous manner, the belt assembly along a first cutting direction substantially parallel to the longitudinal axis to obtain first and second substantially-continuous belt strips extending along two conveying directions substantially parallel to one another;

supplying, in a substantially-continuous manner, the first and second belt strips to a first assembly drum; and

superposing on the first assembly drum portions of the first and second belt strips, each having predetermined length, to obtain a belt structure comprising radially-superposed portions of the first and second belt strips, wherein in each portion of the first belt strip the reinforcing

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cords are substantially parallel to one another, wherein in each portion of the second belt strip the reinforcing cords are substantially parallel to one another, and wherein in the radially-superposed portions of the first and second belt strips the reinforcing cords in the first belt strip are inclined in an opposite direction with respect to the reinforcing cords in the second belt strip;

transferring the belt structure onto a second assembly drum;

coaxially forming on the belt structure a layer of circumferentially-oriented reinforcing cords, the layer having a maximum length and a maximum width substantially equal to those of the belt structure;

b) providing, in a substantially-continuous manner, a plurality of treads by cutting a substantially continuous tread sheet of rubber mixture in portions of predetermined length; and

c) coaxially applying one of the treads on the belt package.

42. (new) The method of claim 41, wherein the treads are formed by extrusion in a substantially-continuous manner.

43. (new) An apparatus for manufacturing a crown structure of a vehicle tire, comprising:

an extrusion apparatus for forming, in a substantially-continuous manner, a sheet of rubber-coated fabric incorporating a plurality of reinforcing cords substantially parallel to one another;

means for conveying the sheet along a first conveying direction;

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a first cutting device for cutting the sheet in a cutting position along a cutting direction forming a first predetermined angle with respect to the first conveying direction to obtain a plurality of strips of predetermined length;

a device for transferring the strips from the cutting position to a releasing position where the strips are arranged parallel to one another along edges of prevailing length thereof;

a device for splicing the strips at the edges of prevailing length thereof to form a substantially-continuous belt assembly incorporating reinforcing cords parallel to one another and inclined at a second predetermined angle with respect to a longitudinal axis of the belt assembly;

means for conveying the strips and the belt assembly along a second conveying direction;

a second cutting device for cutting the belt assembly along the longitudinal axis into two belt strips;

a third cutting device for cutting each of the belt strips into portions of predetermined length;

means for conveying the belt strips and the portions of the belt strips along respective conveying directions;

at least one assembly drum adapted to support the portions of the belt strips;

an extrusion apparatus for forming, in a substantially-continuous manner, a ribbon or tape of rubber mixture incorporating a plurality of reinforcing cords substantially parallel to one another;

means for cutting the ribbon or tape of rubber mixture into portions of predetermined length;

a belt package assembly drum;

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